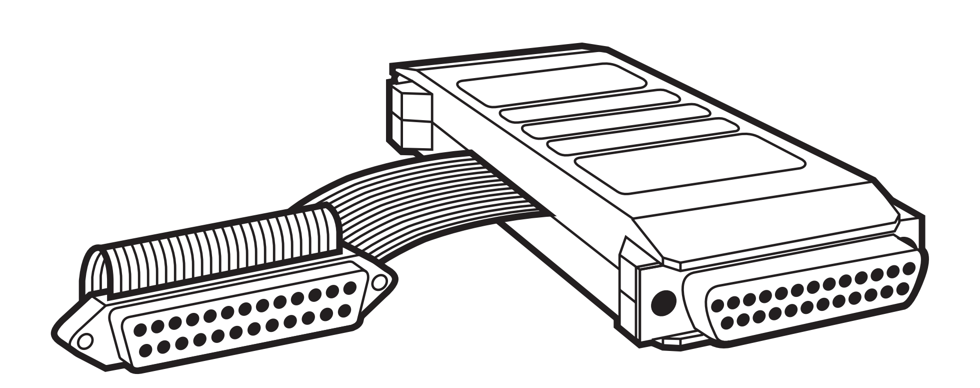


AUGUST 2001
TL111A
TL112A

Non-Powered Port-Sharing (NPPS) and Non-Powered Modem-Sharing (NPMS) Devices



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: **www.blackbox.com** • E-mail: **info@blackbox.com**

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

Contents

1. Specifications

Number of Sub-Channels: (2), expandable by series connection

Channel Configuration:

TL111A (NPPS): Main channel: Port (configured as a DCE device); Sub-channels: Modems (configured as DTE devices);

TL112A (NPMS): Main channel: Modem (configured as a DTE device); Sub-channels: Ports (configured as DCE devices)

Sub-Channel Selection: NPPS: DCD or data transitions; NPMS: RTS on

Sub-Channel Deselection: NPPS: DCD off or 16 bits of idle data; NPMS: RTS off

Timing:

Synchronous:

TL111A (NPPS): Internal clock: 1200, 2400, 4800, 9600, and 19,200 bps;
TL112A (NPMS): External, derived from the main modem up to 19,200 bps;

Asynchronous:

TL111A (NPPS): Up to 19,200 bps;
TL112A (NPMS): Up to 19,200 bps

Power: None required (low power is derived from data and handshaking signals of the attached devices); 6 VDC minimum at 8 mA

Size: 1"H x 2"W x 5"D (2.5 x 5.1 x 12.7 cm)

Weight: 5.3 oz. (150.3 g)

2. Introduction

The Non-Powered Port-Sharing Device (TL111A) enables two modems to share a master port in a multipoint environment.

The Non-Powered Modem-Sharing Device (TL112A) enables two terminals to share a modem or multiplexor in a multipoint environment.

The main channel broadcasts information to sub-channels in parallel. Sub-channels contend to transmit to the main channel on the NPPS model by activating DCD only, or by data transitions and DCD. On the NPMS model, RTS activates contention.

If RTS/DCD (data) is raised, the sub-channel's transmit data and controls are connected to the main channel. When RTS/DCD (data) drops, control circuitry is switched to monitor the other sub-channel.

A sub-channel is disconnected immediately after it drops RTS on the NPMS. On the NPPS, disconnection occurs immediately after DCD drops or the transmission of 16 idle bits (strappable).

Both units are completely transparent to the system and the data. They operate with synchronous or asynchronous equipment and generate timing signals using either external clocks from the main channel (in the NPMS) or internal clocks (in the NPPS).

3. Installation

3.1 Installing the NPMS (TL112A)

Installation of the NPMS is straightforward and simple. No tuning or strapping is required.

1. Connect the pigtail main connector to the main modem.
2. Connect the female connectors on the NPMS to the terminals using straight-through cables.
3. Strap the main modem to internal clock.
4. The NPMS is now ready for operation.

3.2 Installing the NPPS (TL111A)

Installation of the NPPS is straightforward and simple. No tuning is required, but three options must be strapped. To set the options as desired, follow these steps.

1. Press the two tabs on either side of the unit. When the tabs are free, you can separate the two halves of the cover.
2. Determine the bit rate by strapping to the appropriate speed as shown in Table 3-1.
3. Choose between contention on data transitions and DCD, or contention on DCD (Data Carrier Detect) only, for each one of the subchannels. See Table 3-1.

Table 3-1. NPPS strap selection.

Strap	Function	Positions	Factory Setting
Bit Rate	Selects the rate at which data is transmitted.	1200 2400 4800 9600 19,200	9600
CH1	Determines if subchannel 1 contends by data and DCD or by DCD only.	DCD DATA	DATA
CH2	Determines if subchannel 2 contends by data and DCD or by DCD only.	DCD DATA	DATA

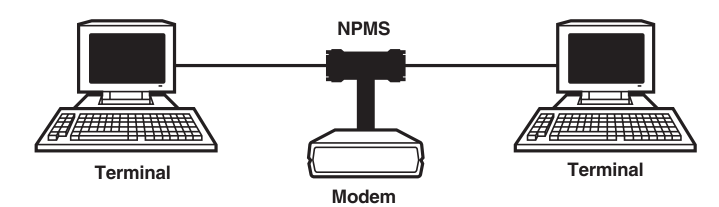


Figure 3-1. Typical application for the NPMS.

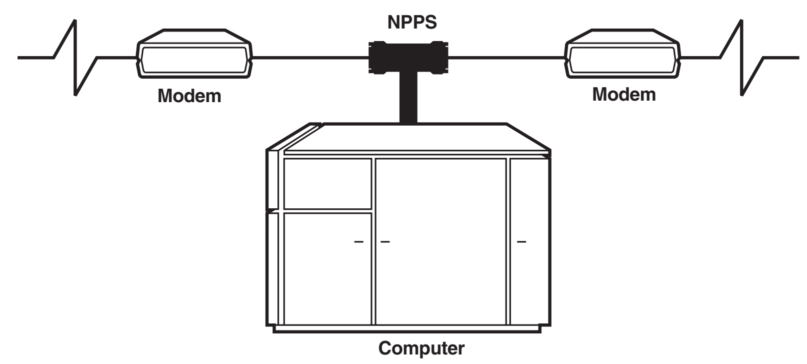


Figure 3-2. Typical application for the NPPS.

4. RS-232 Recommended Standard Pinout

Pin	Name	EIA RS-232C	CCITT V.24	Description	Direction To DCE	Direction From DCE
1	FG	AA	101	Frame/Protective Ground	-	-
2	TD	BA	103	Transmitted Data	Input	Output
3	RD	BB	104	Received Data	Output	Input
4	RTS	CA	105	Request to Send	Input	Output
5	CTS	CB	106	Clear to Send	Output	Input
6	DSR	CC	107	Data Set Ready	Output	Input
7	SG	AB	102	Signal Ground	-	-
8	DCD	CF	109	Received Line Signal Detector	Output	Input
9	POS	-	-	Reserved for Data Set Testing	Output	Input
10	NEG	-	-	Reserved for Data Set Testing	Output	Input
11				Unassigned (Handshake Line)	N.C.	N.C.
12	SDCD	SCF	122	Secondary Received Line Signal Detector	N.C.	N.C.
13	SCTS	SCB	121	Secondary Clear to Send	N.C.	N.C.
14	STD	SBA	118	Secondary Transmitted Data	N.C.	N.C.
15	TC	DB	114	Transmitter Signal Element Timing	Output	Input
16	SRD	SBB	119	Secondary Received Data	N.C.	N.C.
17	RC	DD	115	Receiver Signal Element Timing	Output	Input
18				Unassigned	N.C.	N.C.
19	SRTS	SCA	120	Secondary Request to Send	N.C.	N.C.
20	DTR	CD	108.2	Data Terminal Ready	Input	Output

Pins marked N.C. (Not Connected) are not used.

Pin	Name	EIA RS-232C	CCITT V.24	Description	Direction	
					To DCE	From DCE
21	SQ	CG	110	Signal Quality Detector	N.C.	N.C.
22	RI	CE	125	Ring Indicator	N.C.	N.C.
23	-	CH	111	Data Signal Rate Selector (DTE)	N.C.	N.C.
23		CI	112	Data Signal Rate Selector (DCE)	N.C.	N.C.
24	SCTE	DA	113	Transmitted Signal Element Timing	Input	Output
25	-	-	-	Unassigned	N.C.	N.C

Pins marked N.C. (Not Connected) are not used.

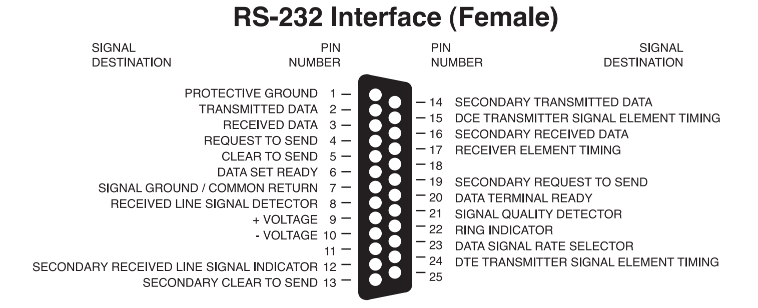


Figure 4-1. RS-232 interface.



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